

# Basic principles

$\pm 10$  degrees

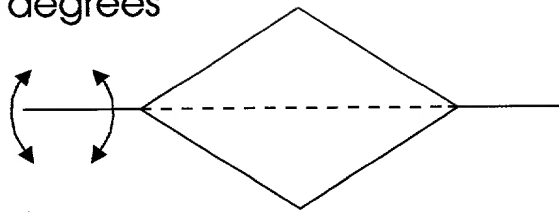


Fig. 1

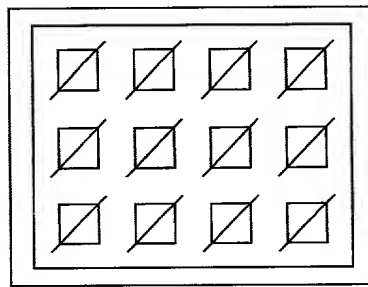


Fig. 2

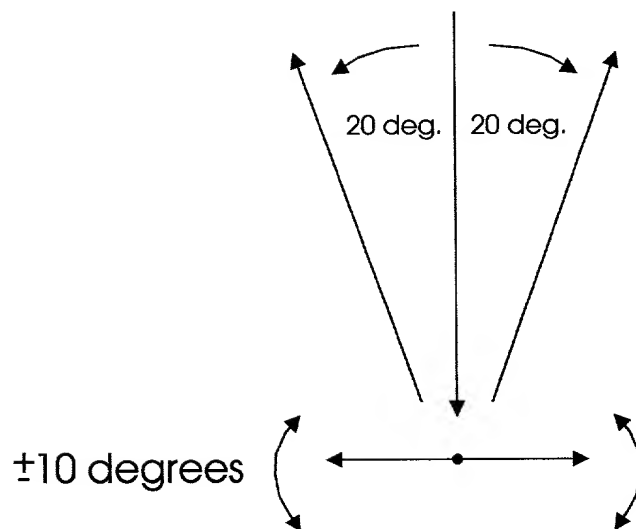


Fig. 3

# Basic principles

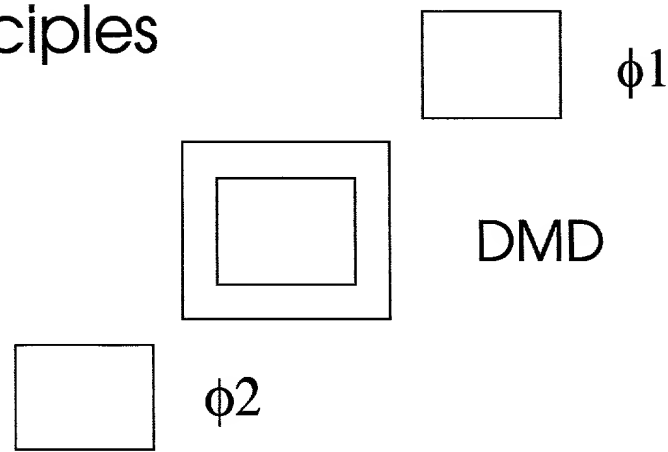


Fig. 4

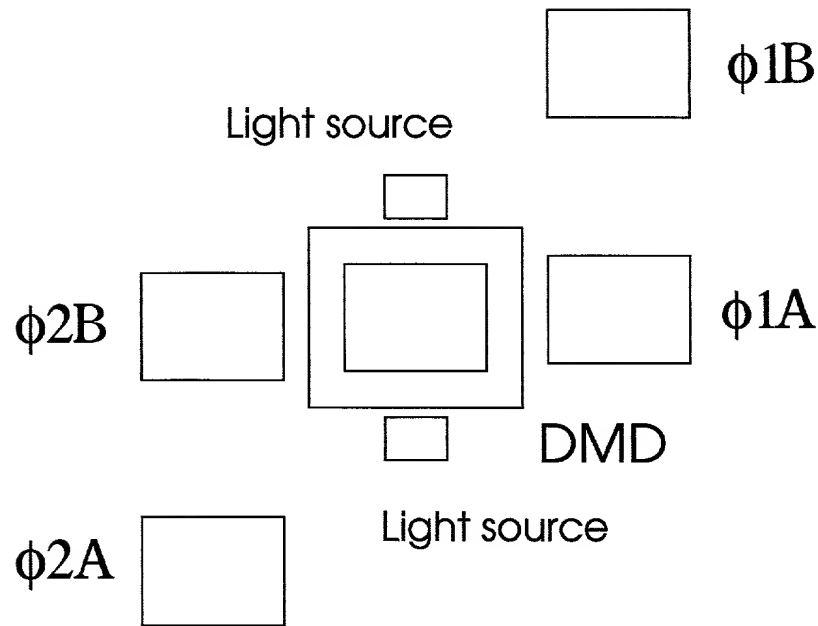


Fig. 5

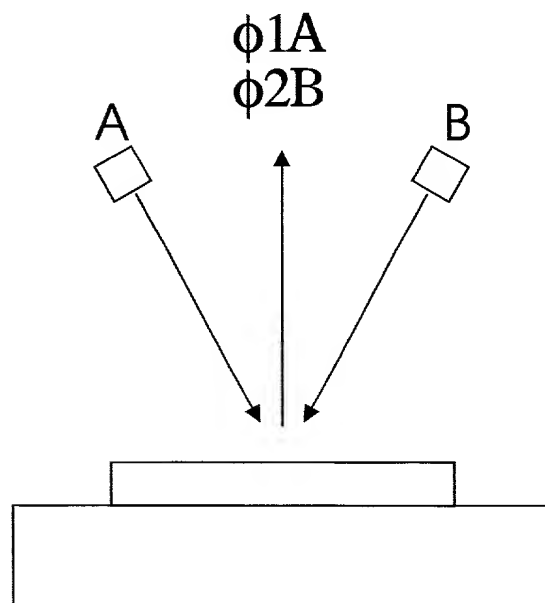


Fig. 6

# Mirror HMD - Single Stage

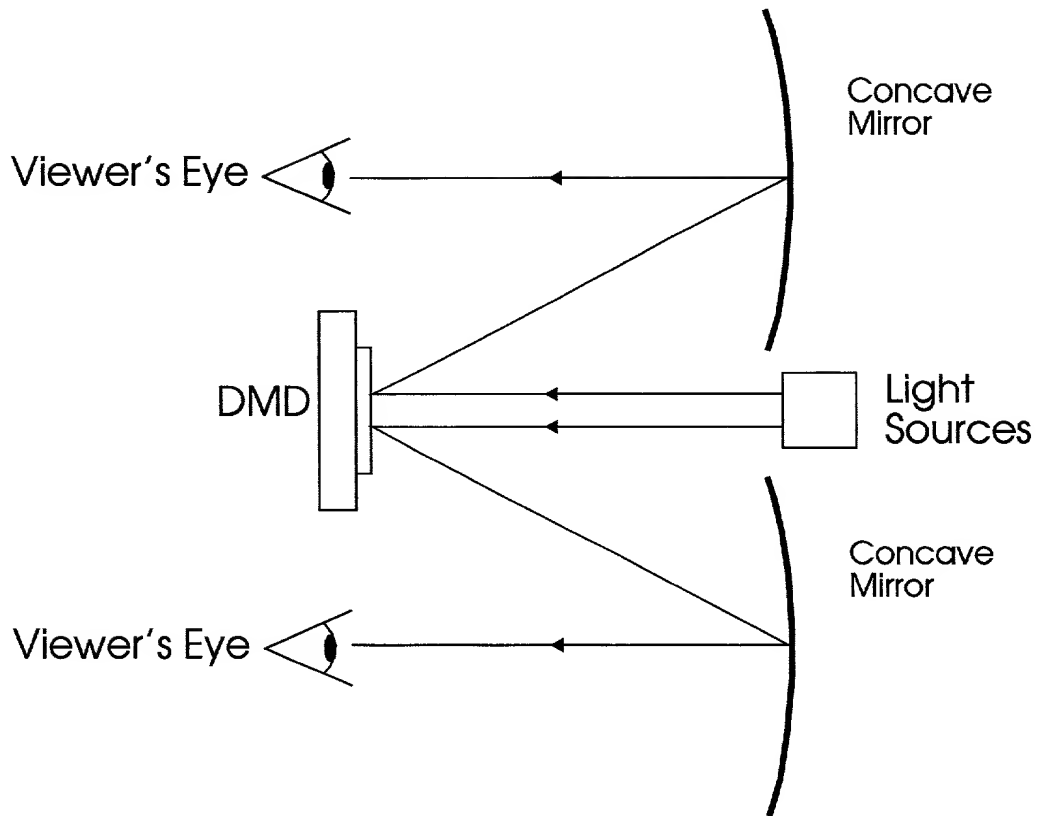


Fig. 7

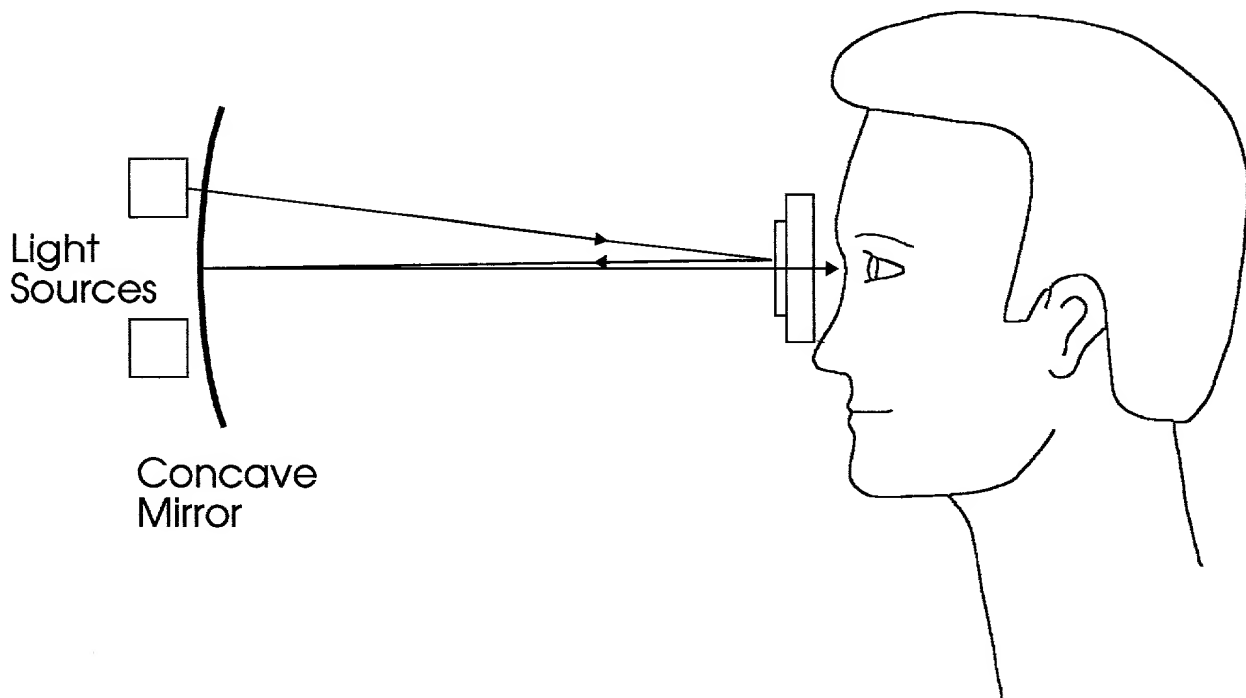


Fig. 8

# Mirror HMD - Two Stage

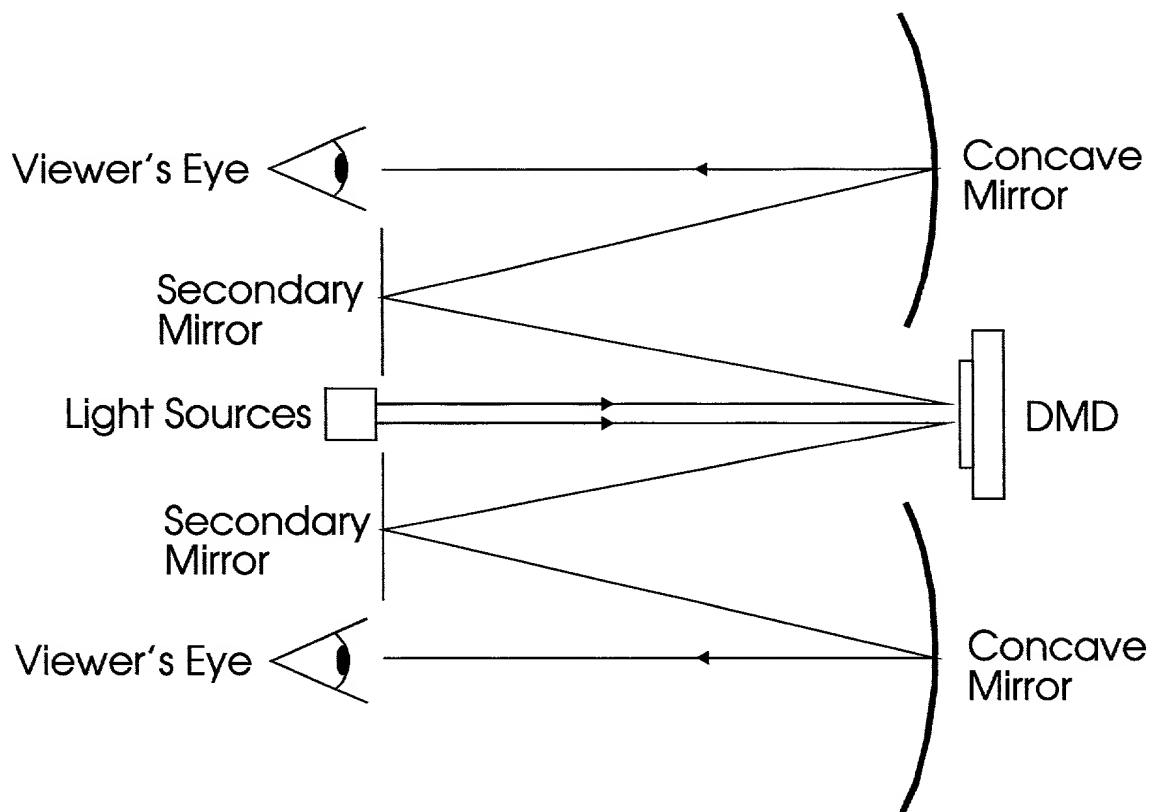


Fig. 9

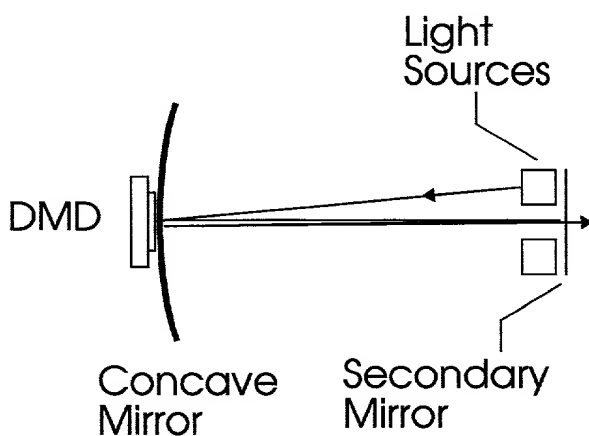


Fig. 10

# Enhancements

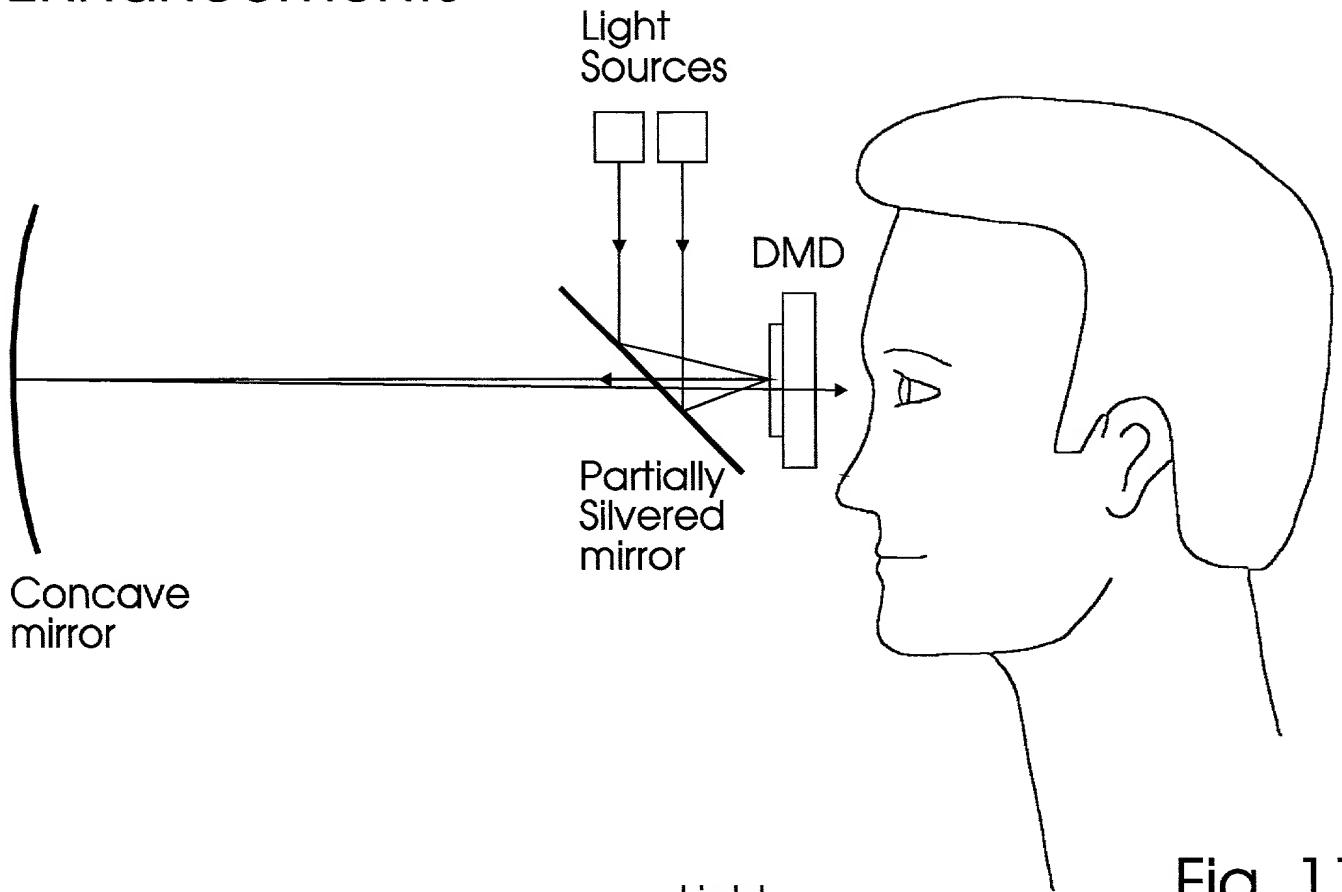


Fig. 11

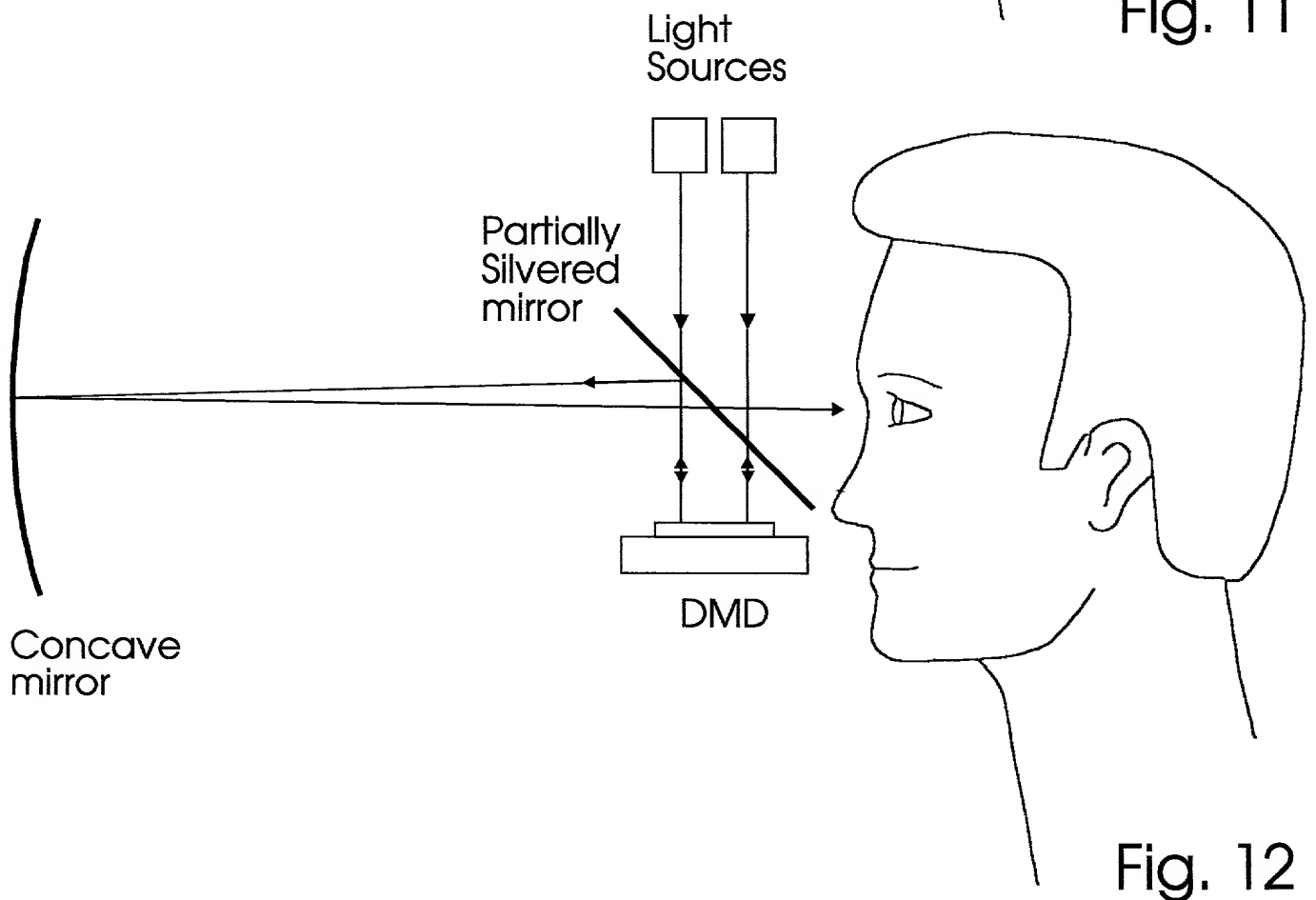


Fig. 12

# Enhancements

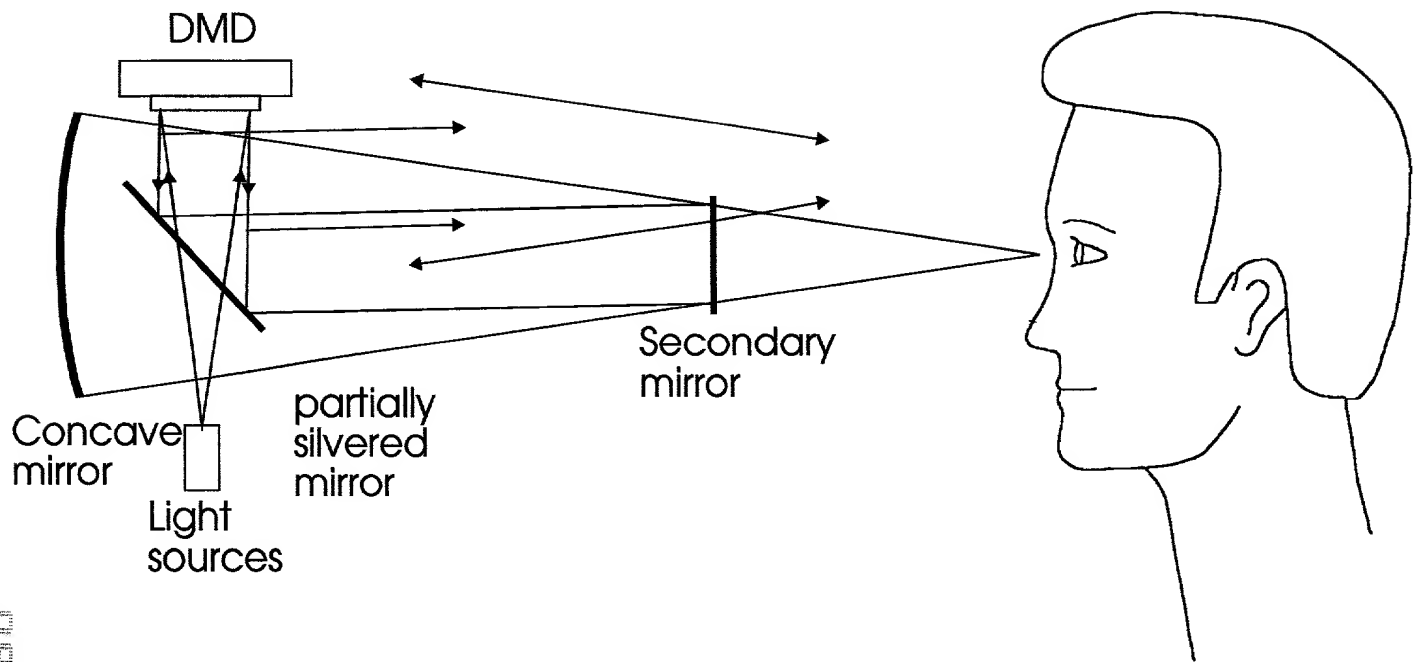


Fig. 13

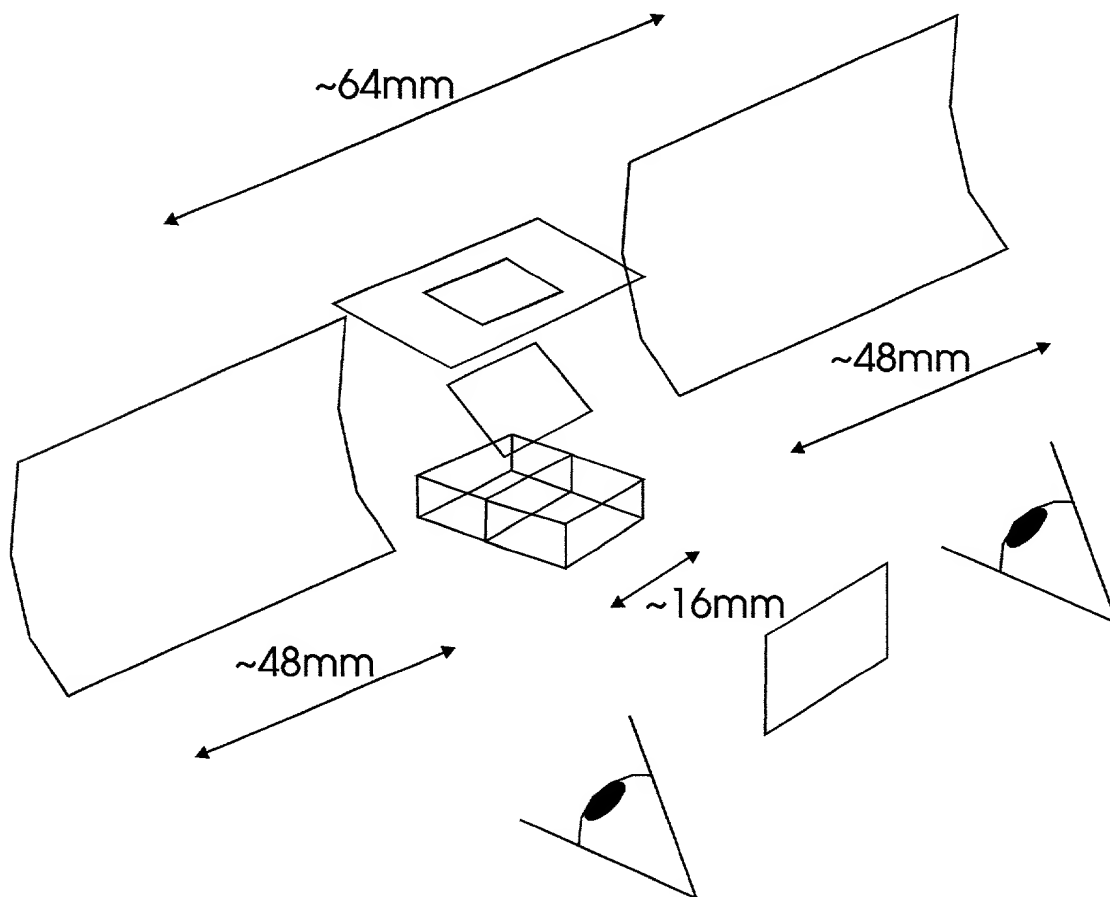
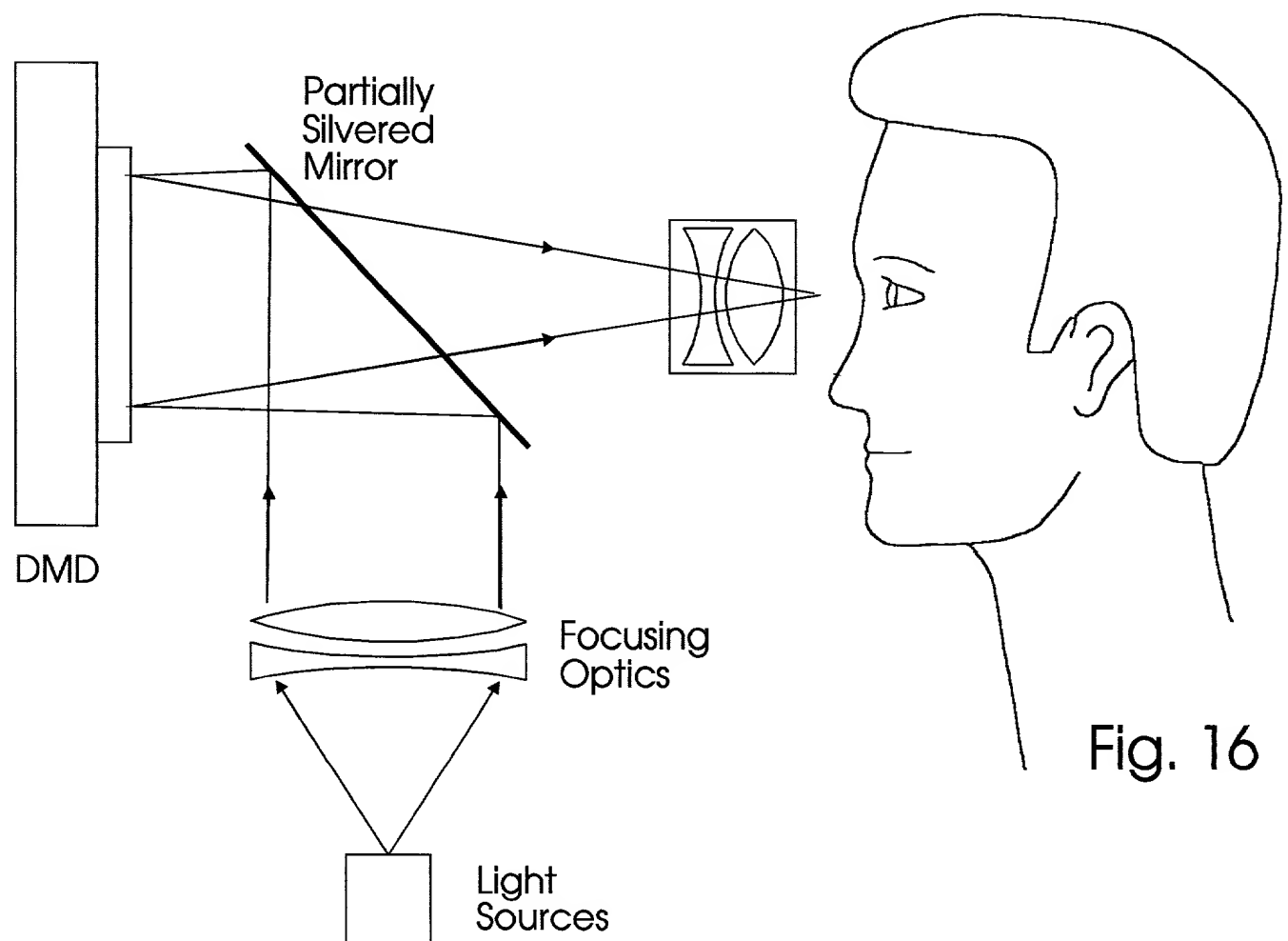
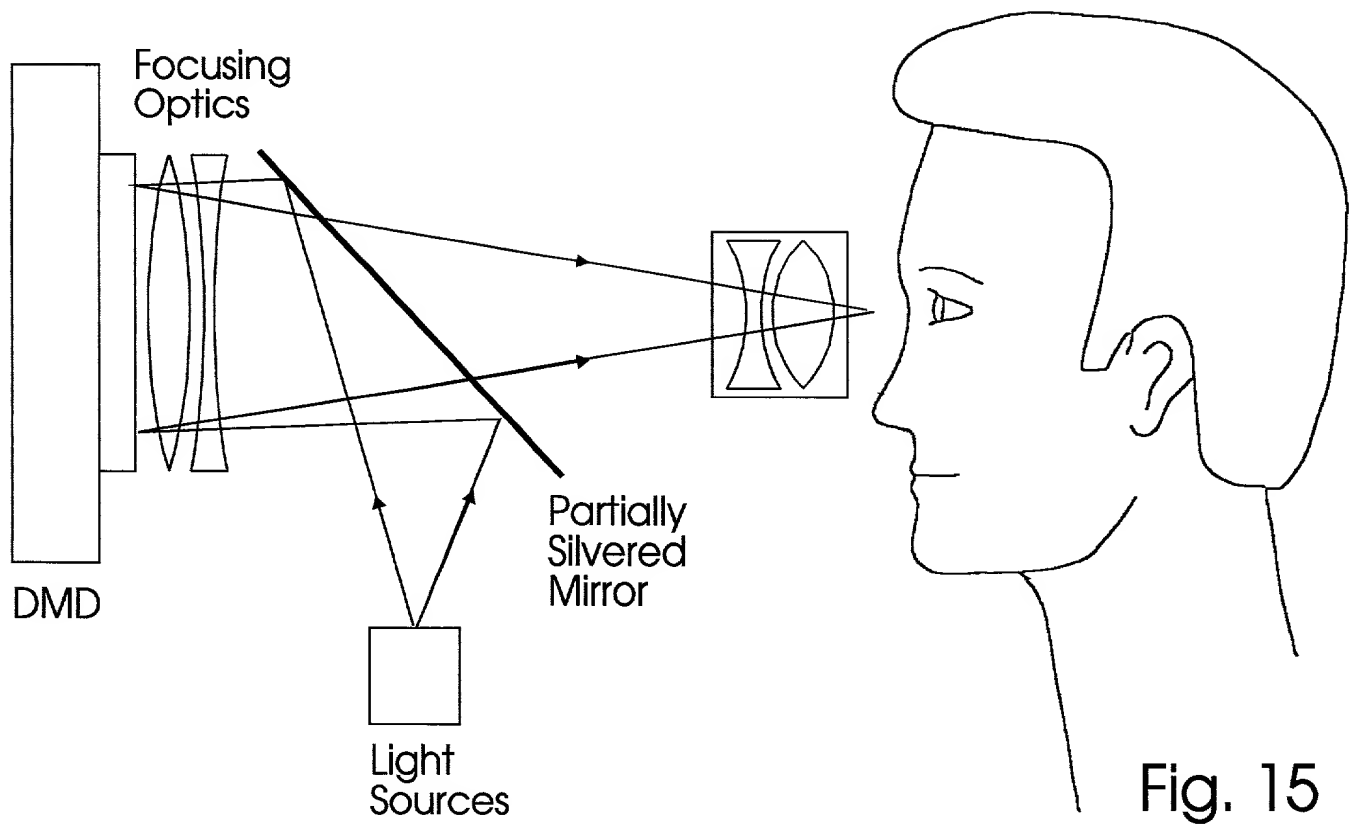


Fig. 14

# Dual DMD lens system



# 2 stage dual mirror hybrid HMD

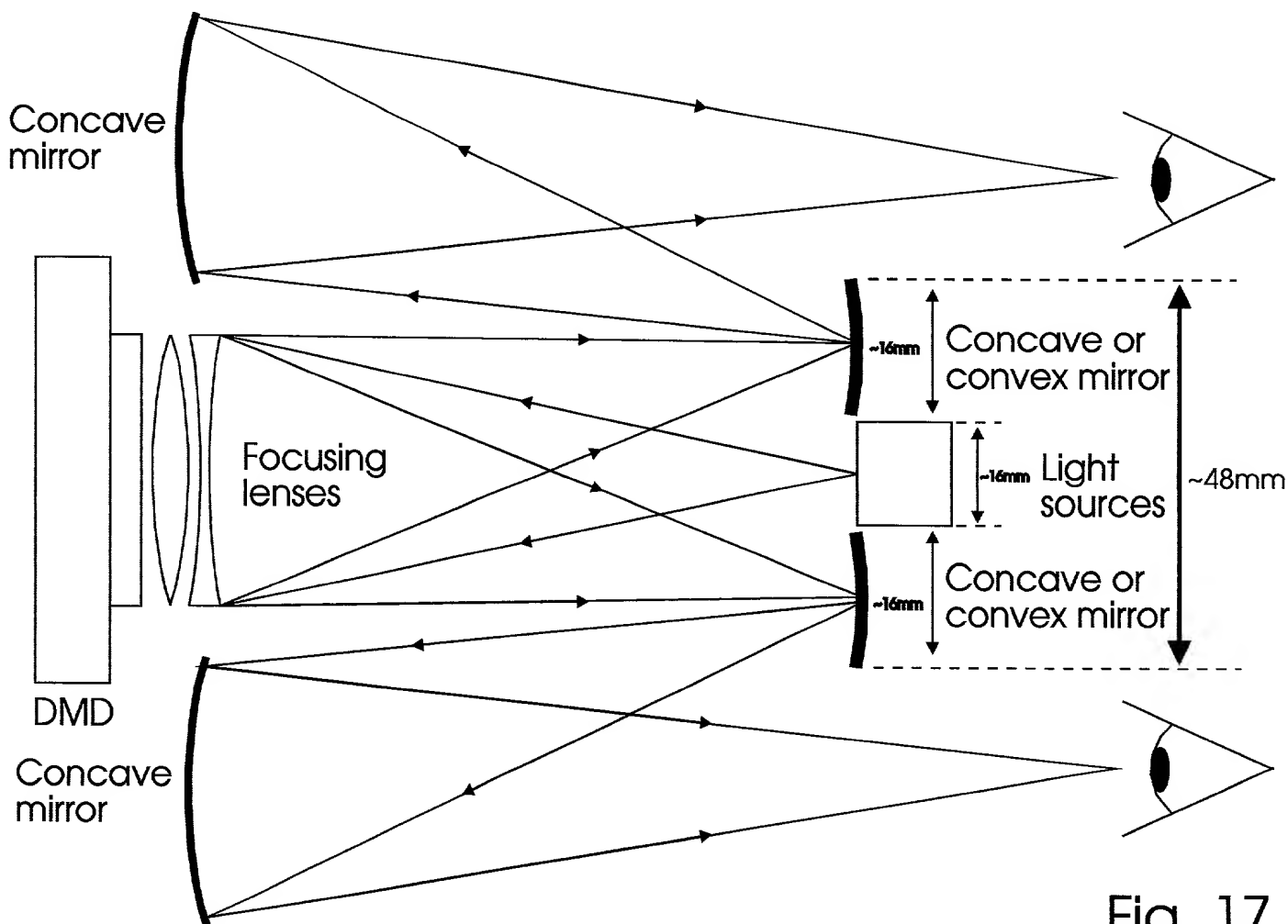


Fig. 17

## Single DMD lens HMD

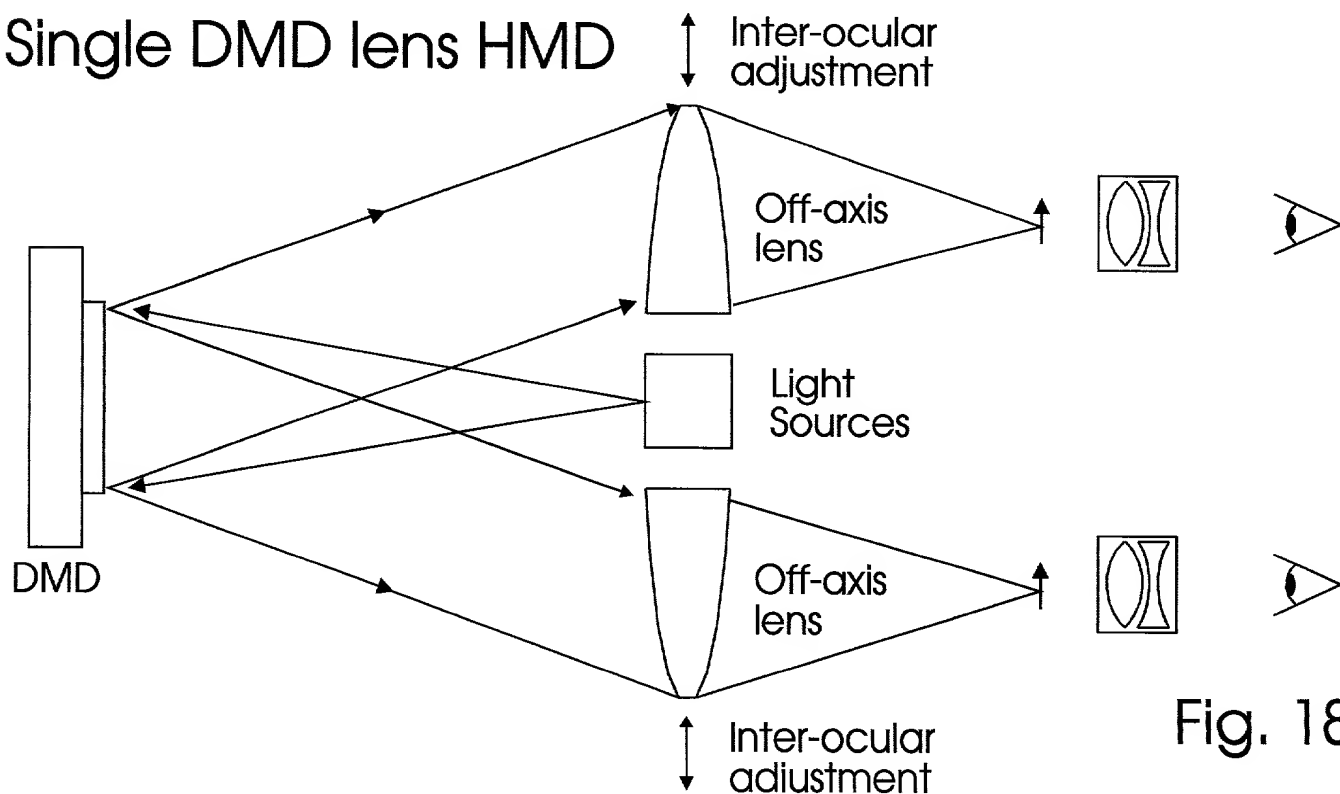


Fig. 18



# Prismatic lens design

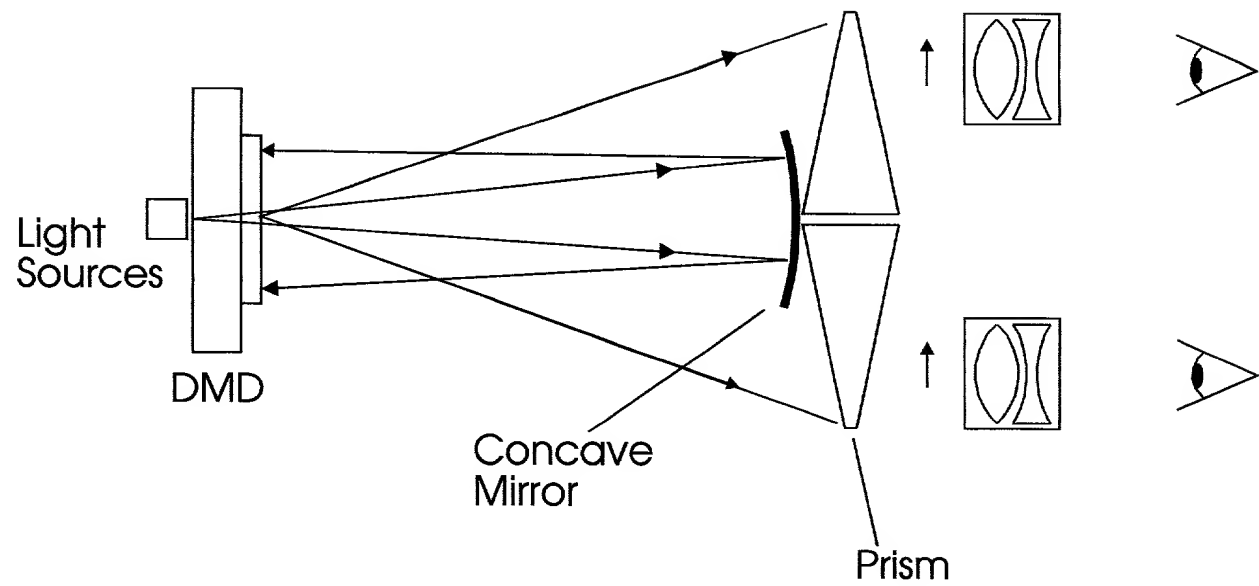


Fig. 19

# Binocular lens design

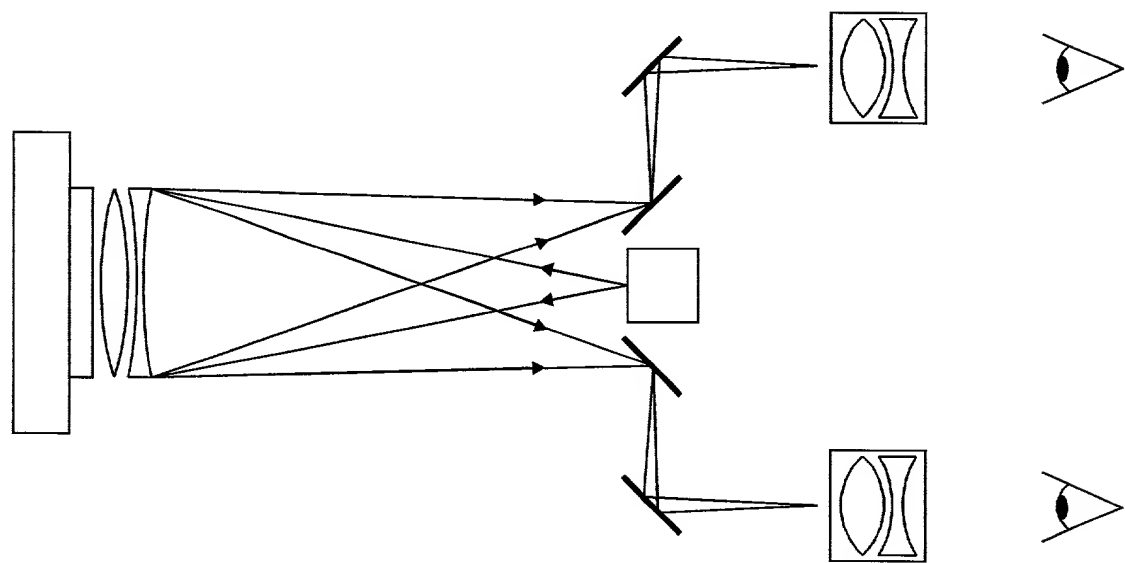


Fig. 20

# Single stage hybrid lens system

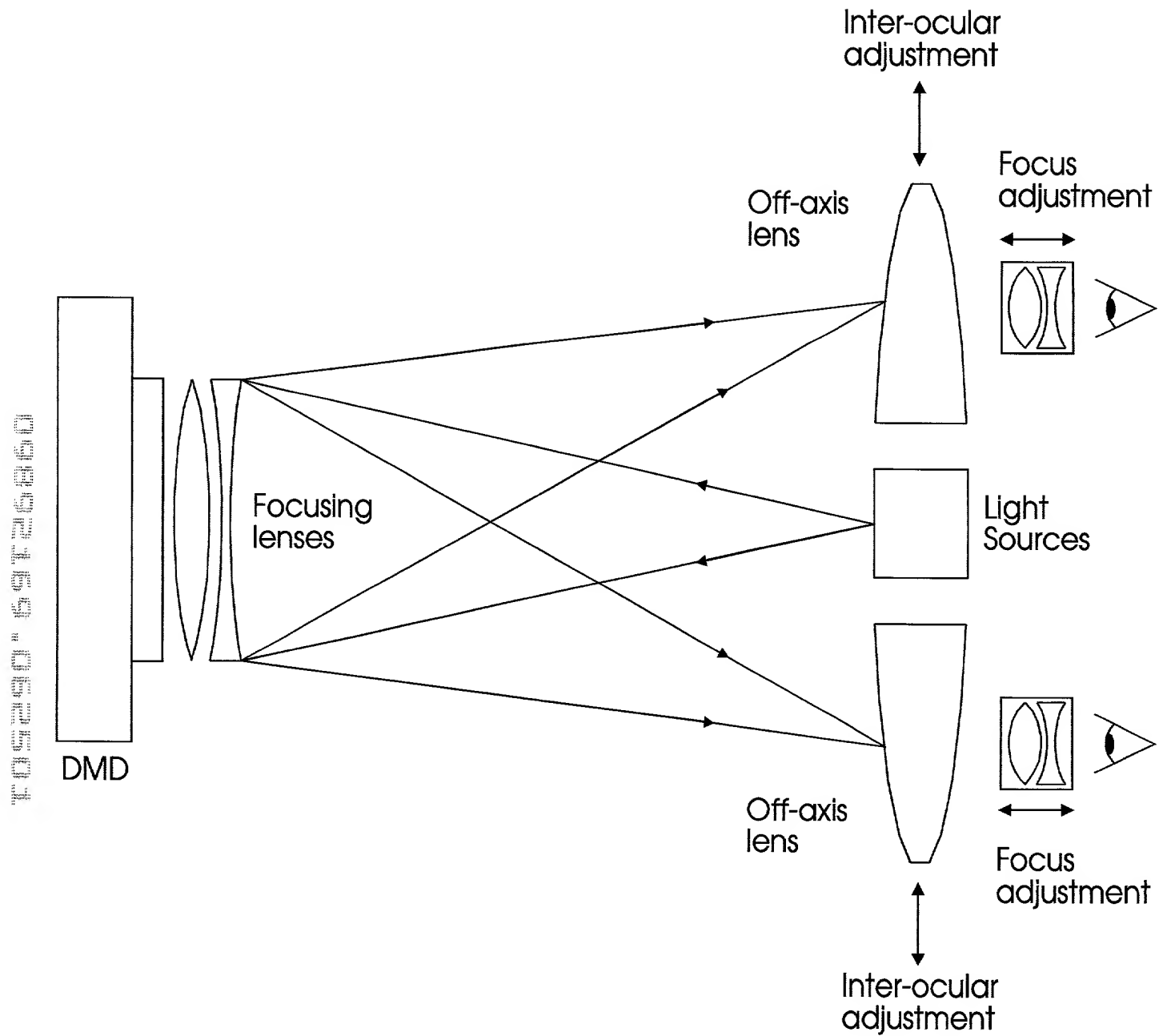


Fig. 21

## 2 stage hybrid lens system (preferred embodiment)

Downloaded from ascelibrary.org by University of California, San Diego on 06/01/15

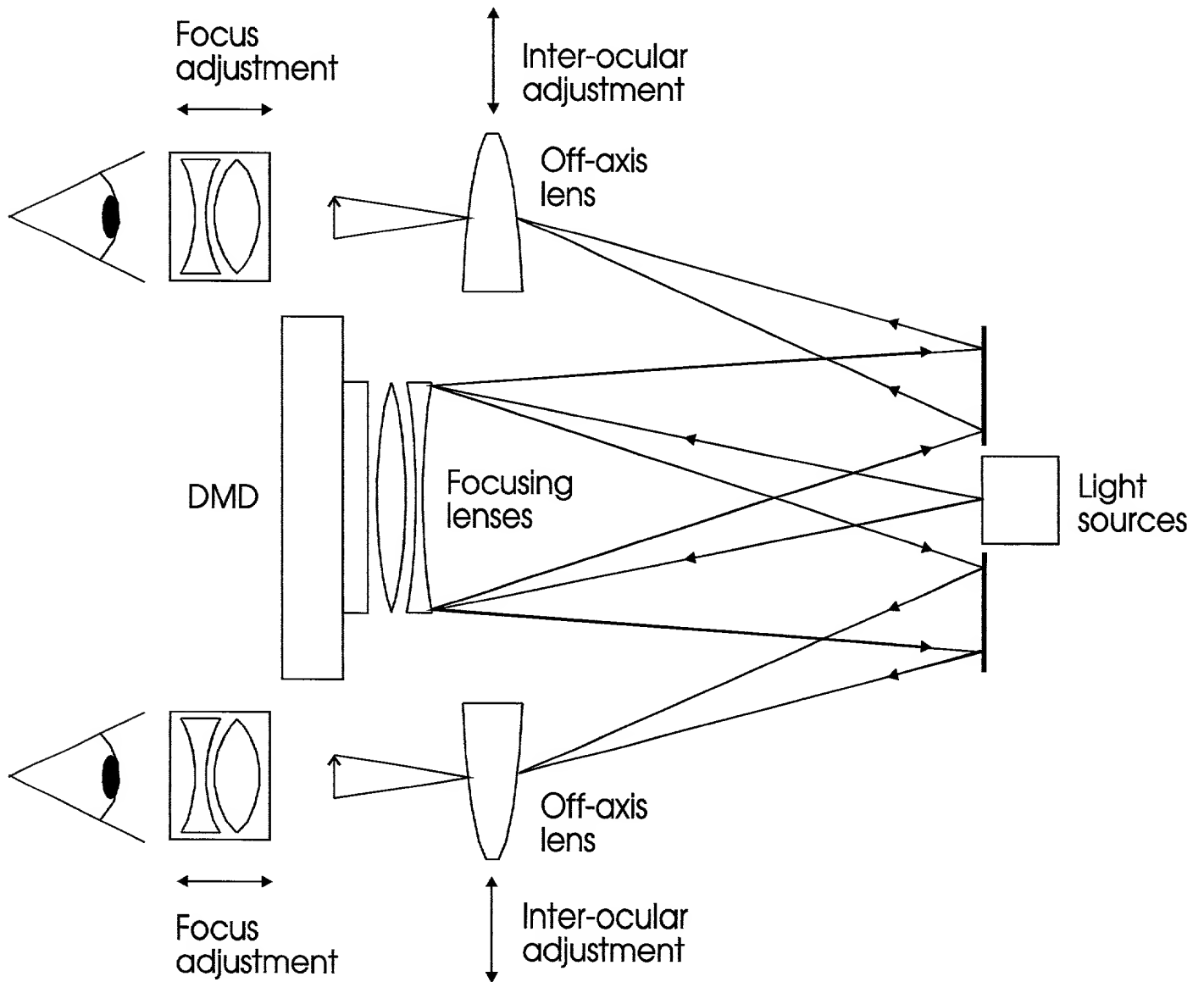


Fig. 22

# Lens HMD enhancements

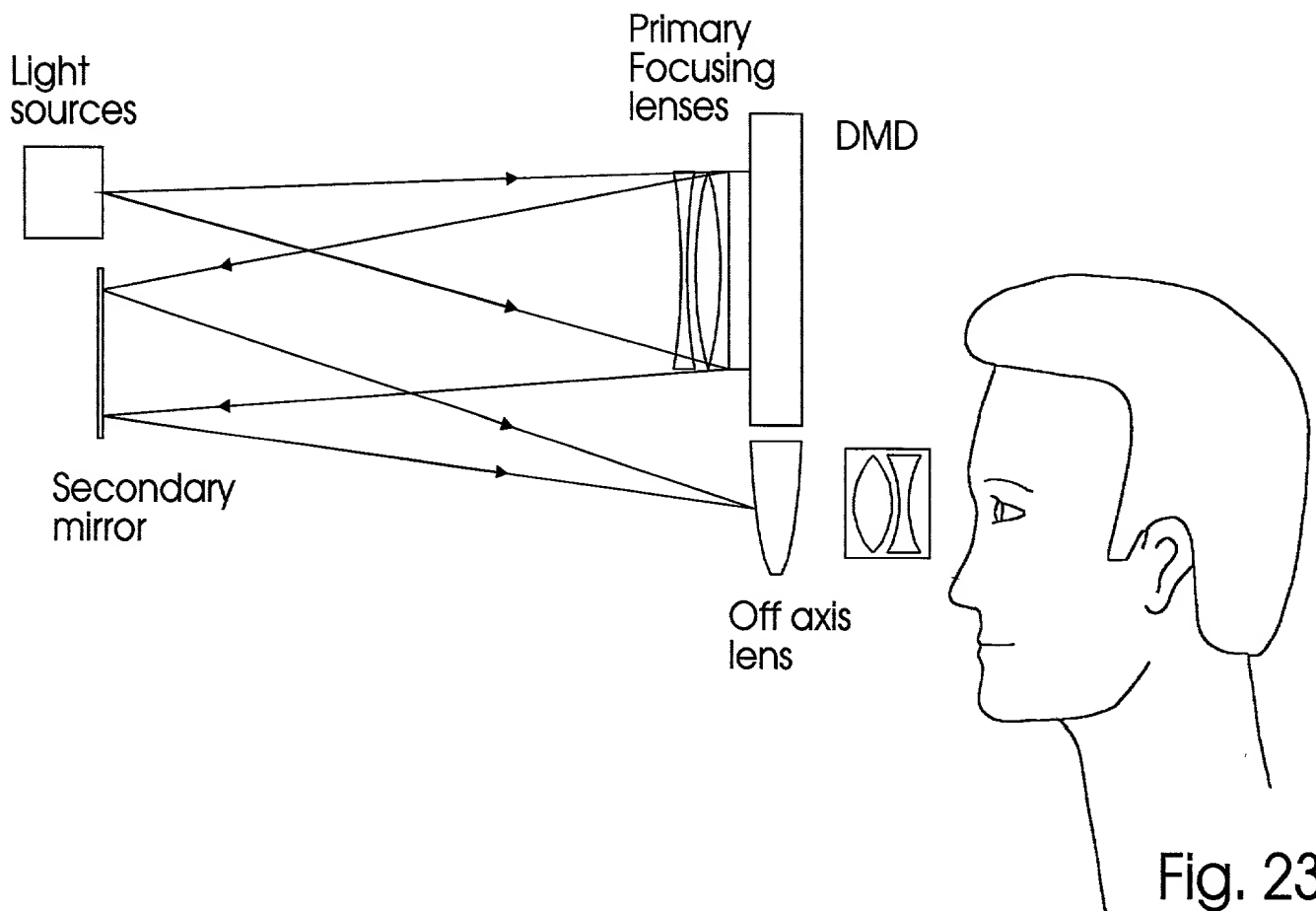


Fig. 23

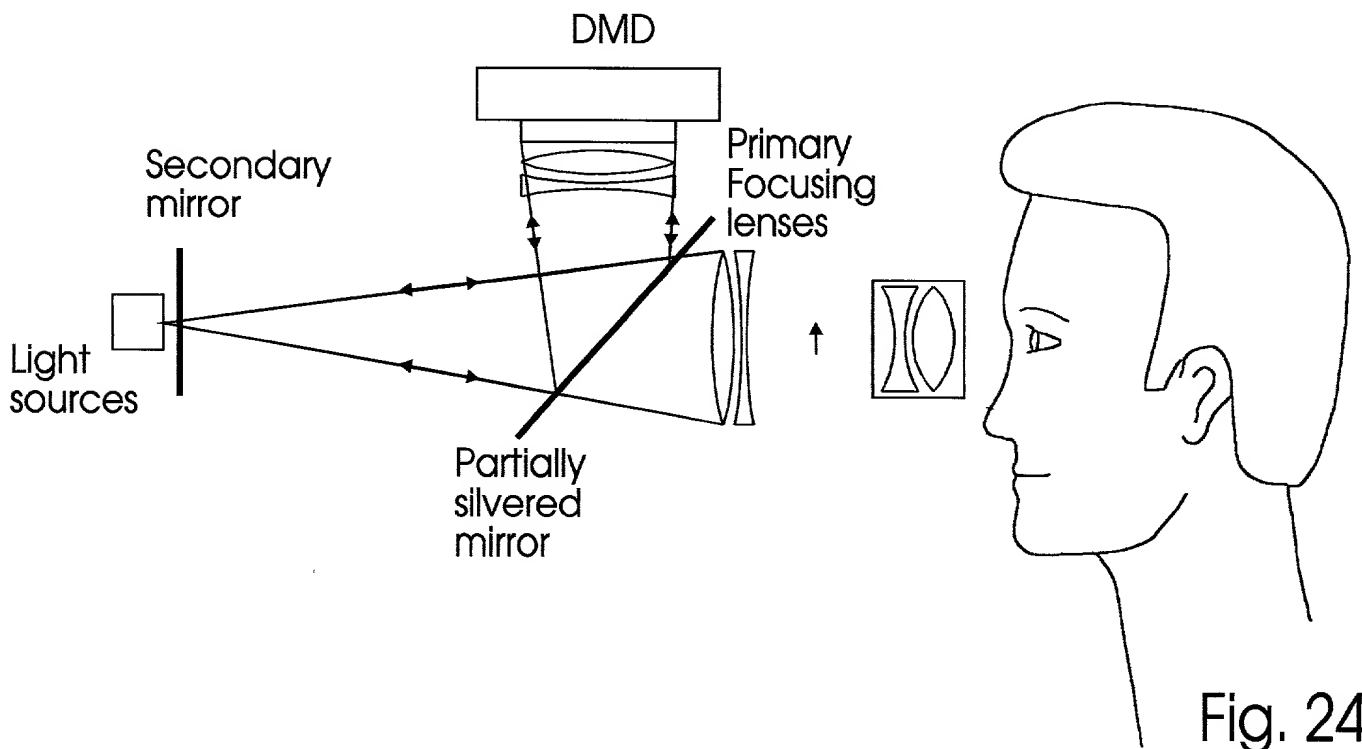
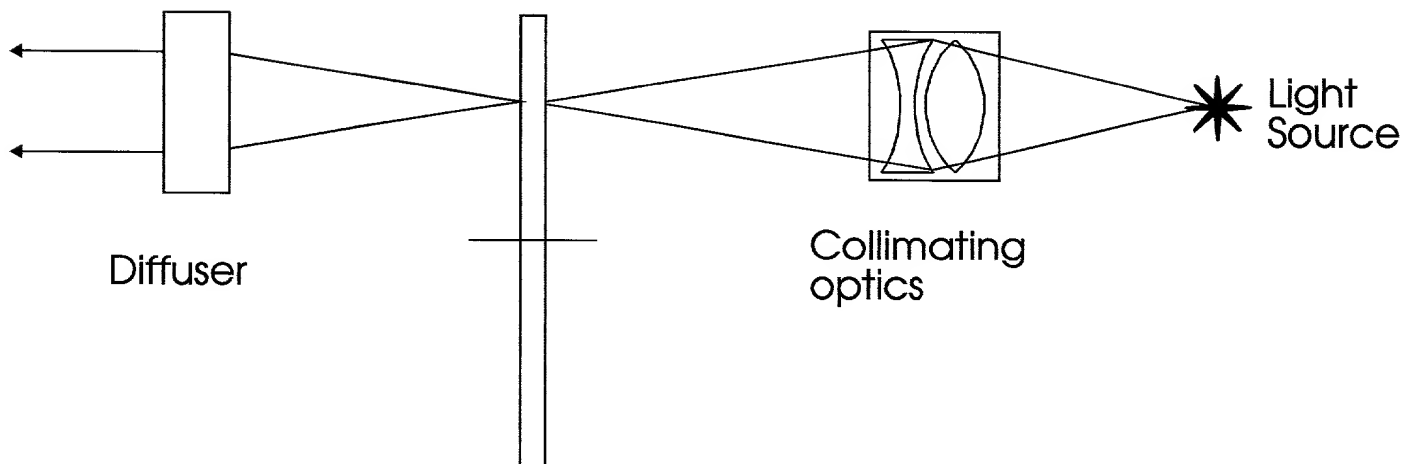
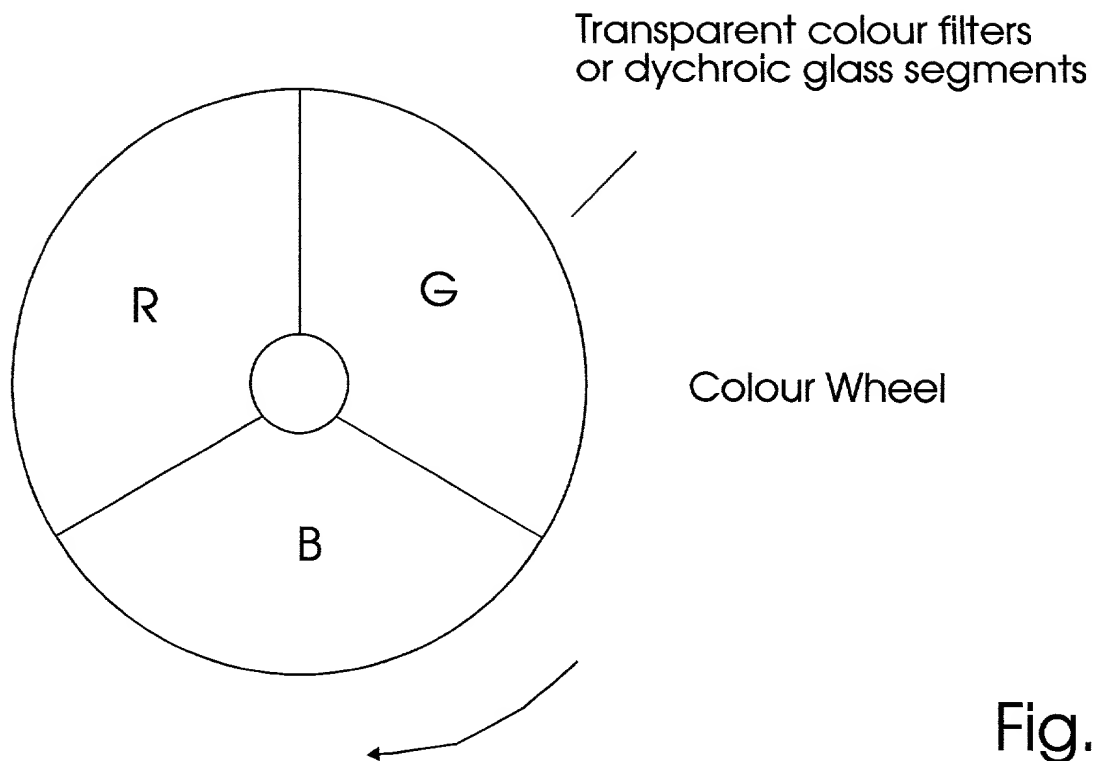


Fig. 24

# Light sources



# Light sources

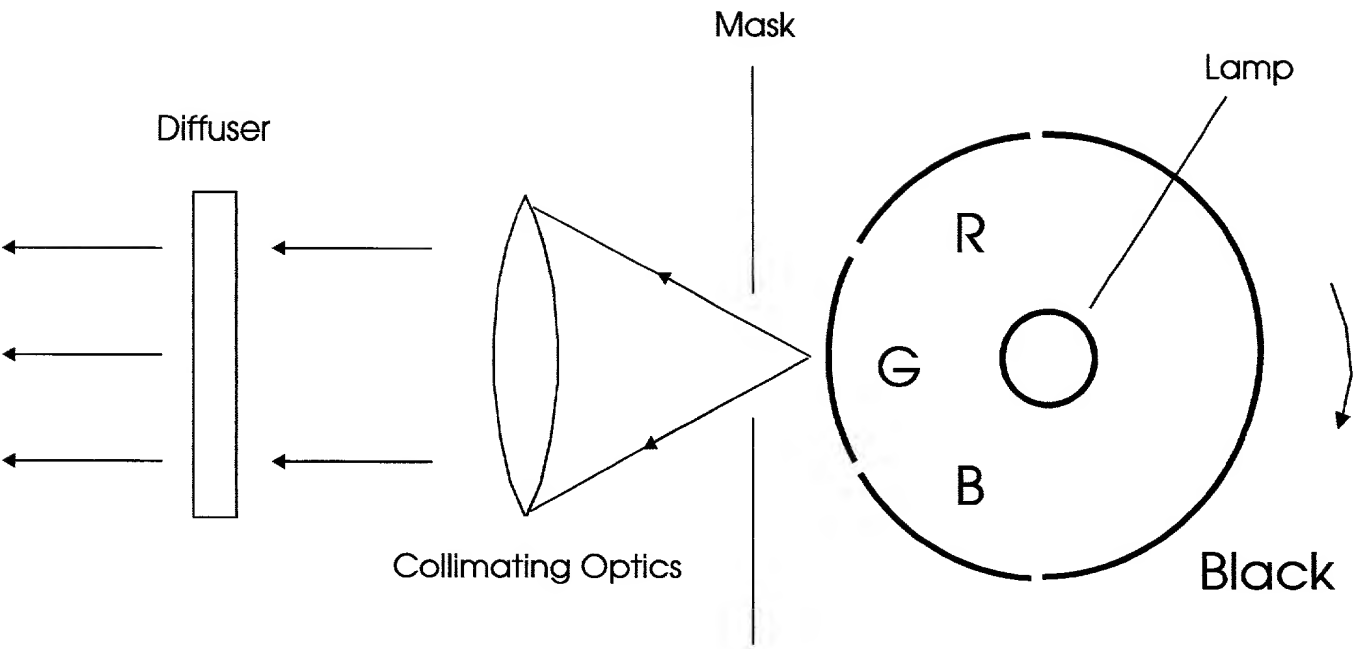


Fig. 27

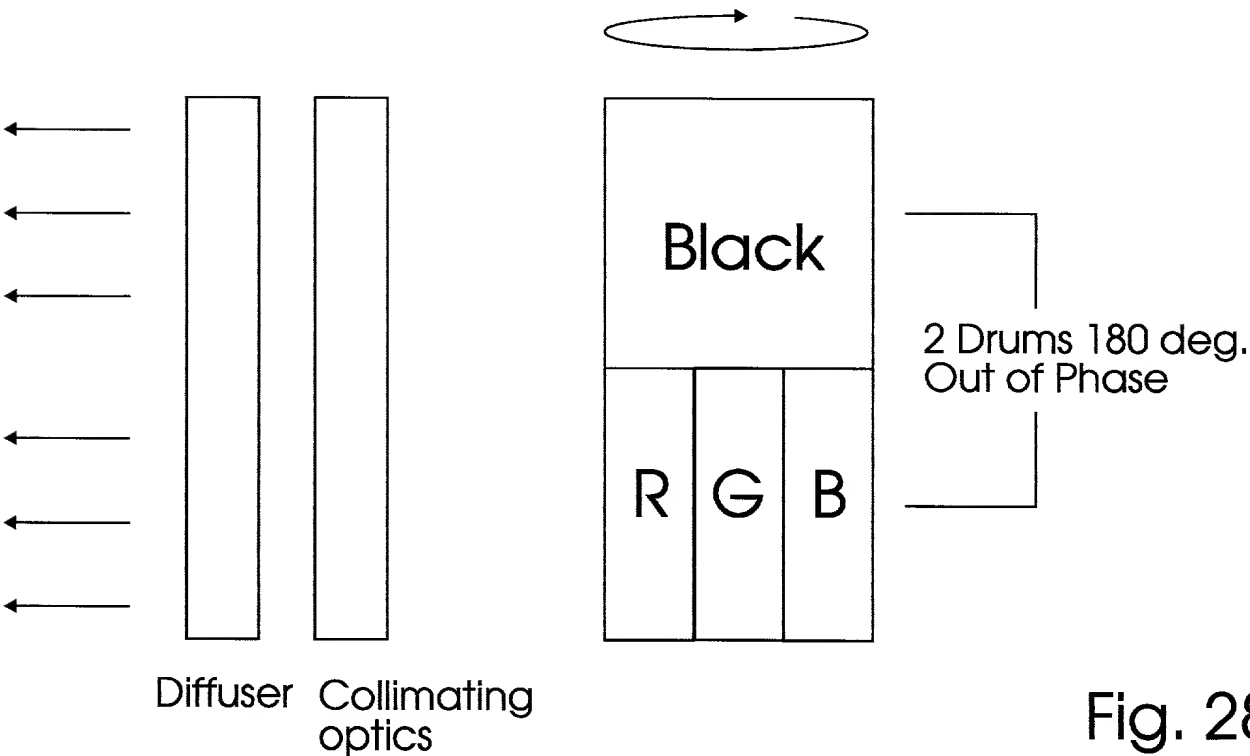


Fig. 28

# Light sources

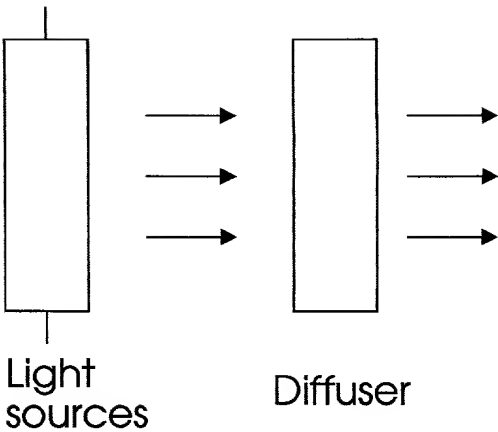
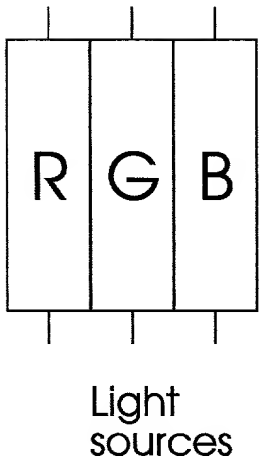


Fig. 29

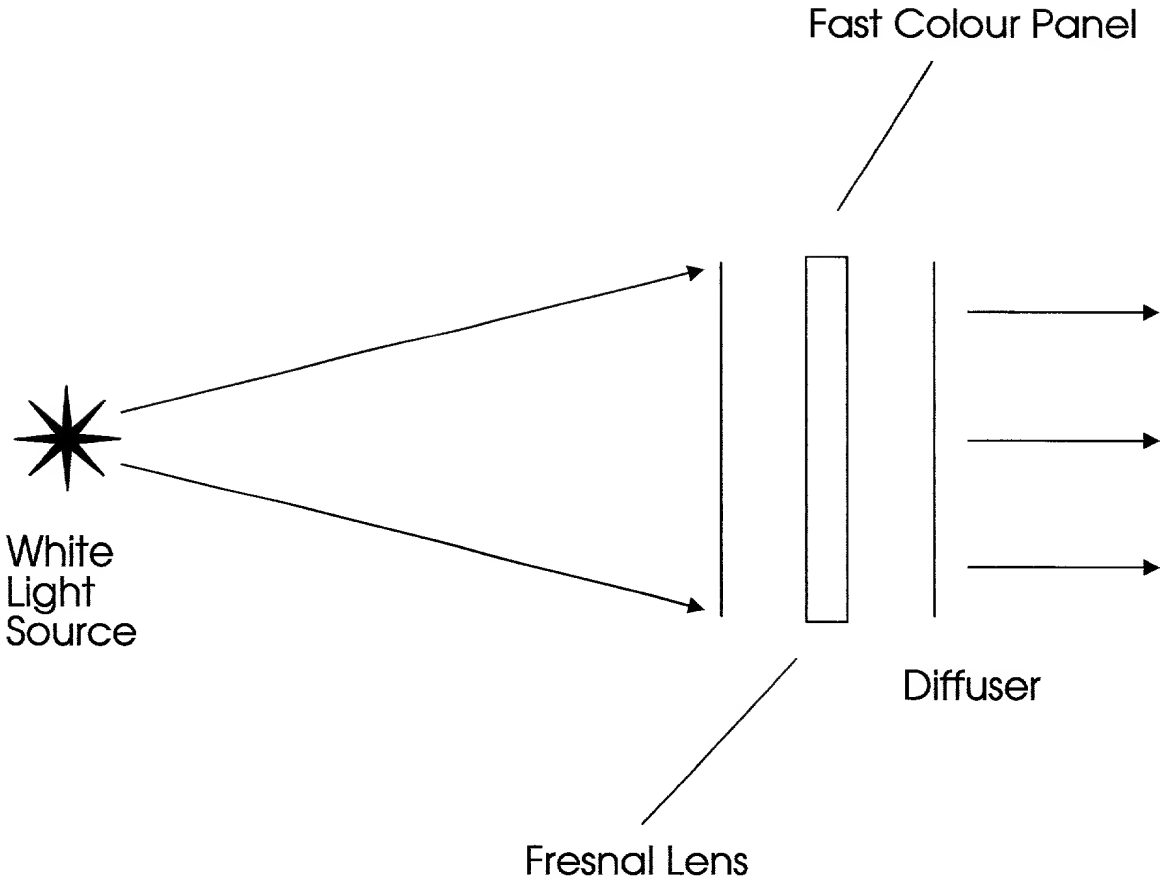


Fig. 30

# Light sources

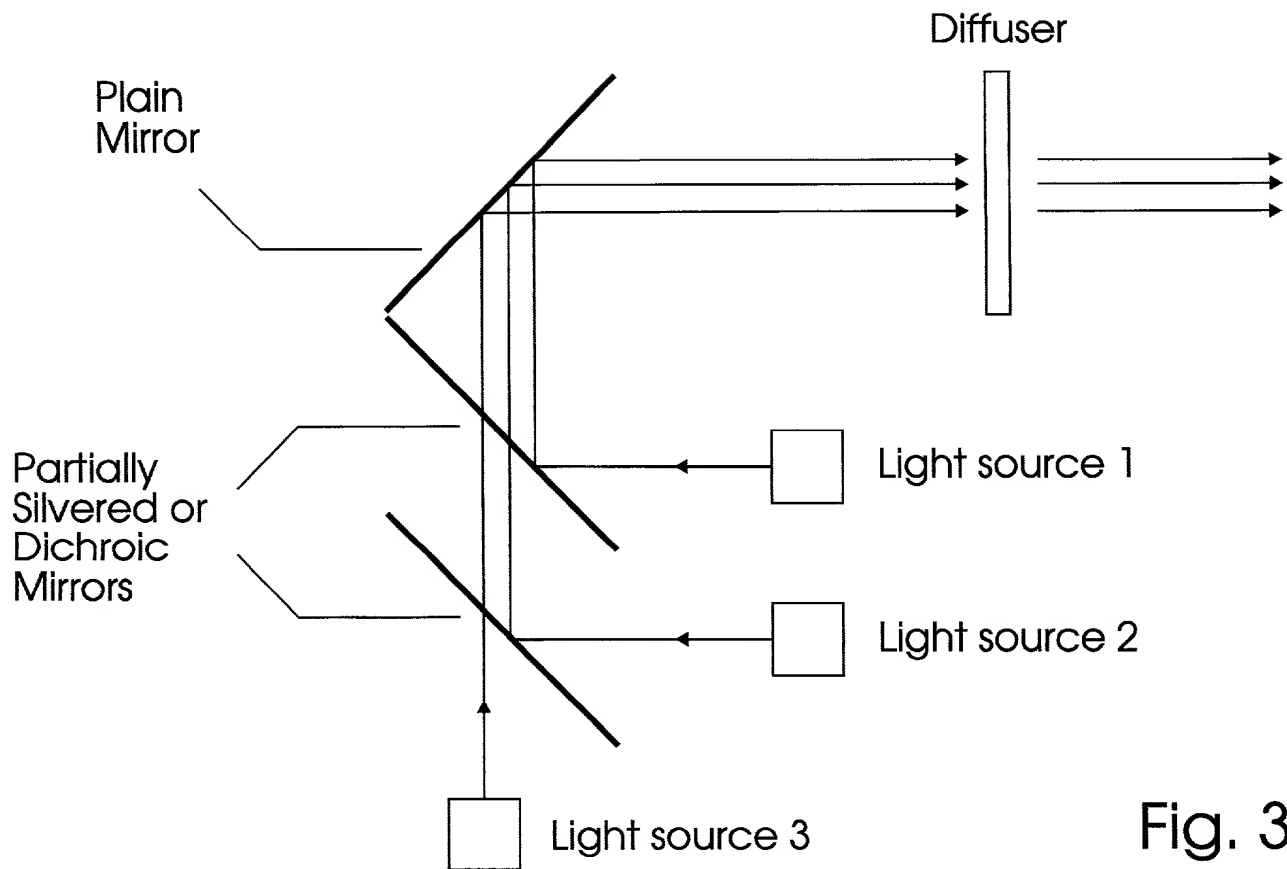


Fig. 31

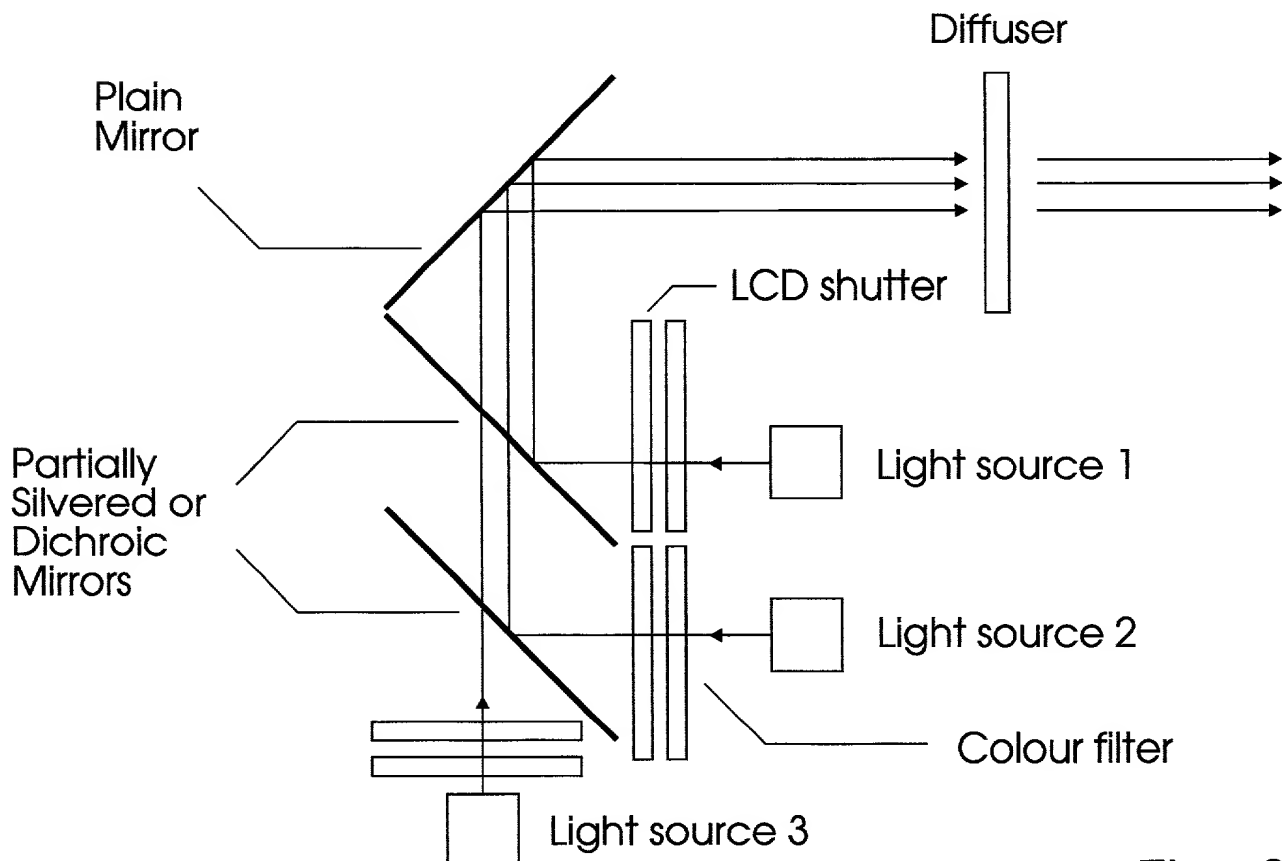
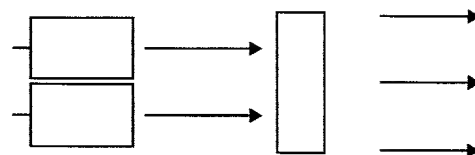
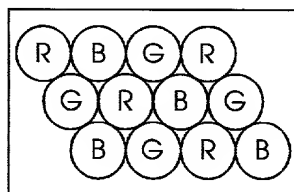


Fig. 32



# Light Sources

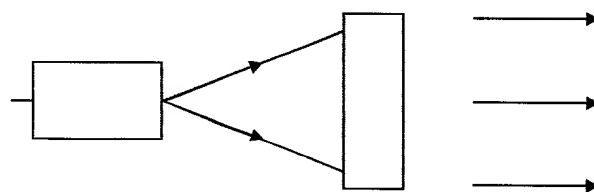
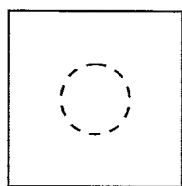
## LED Array-1 (Monochrome LEDs)



LED array      Diffuser

Fig. 33

## LED Array - 2 (Full Spectrum LEDs)



Full spectrum  
LED

Diffuser

Fig. 34

# Optical enhancements

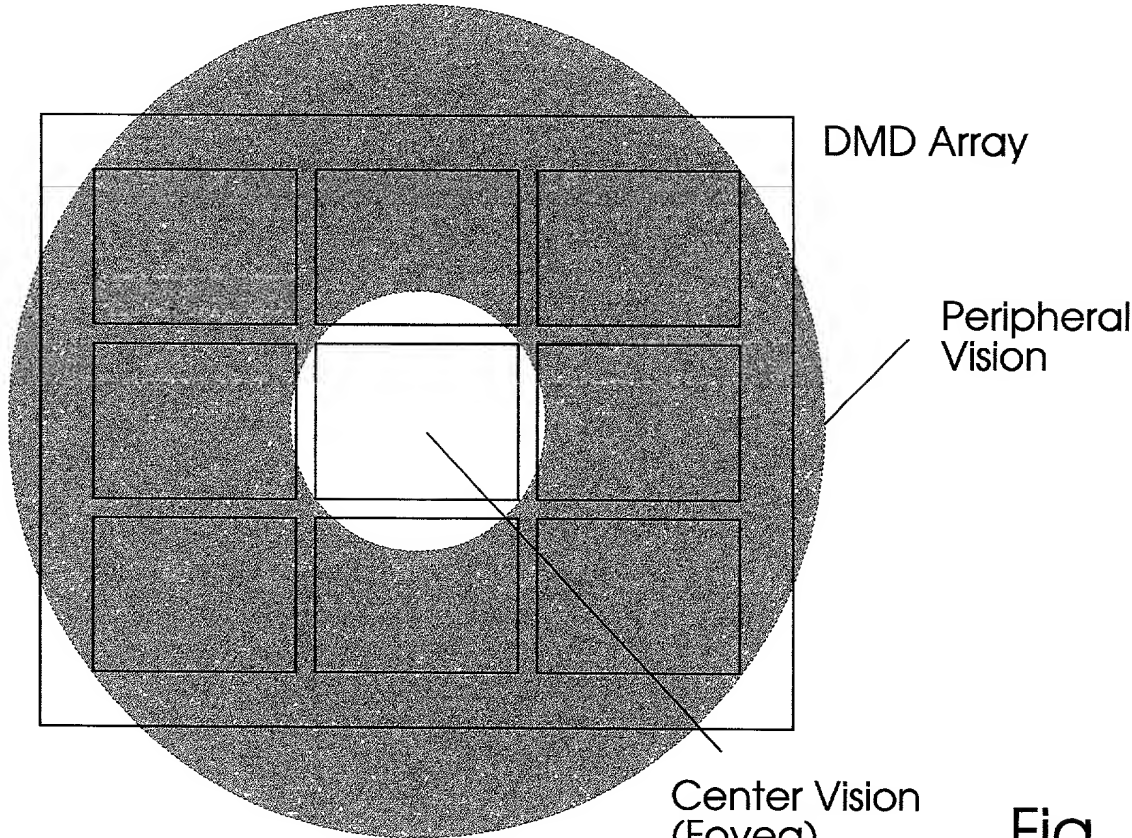


Fig. 35

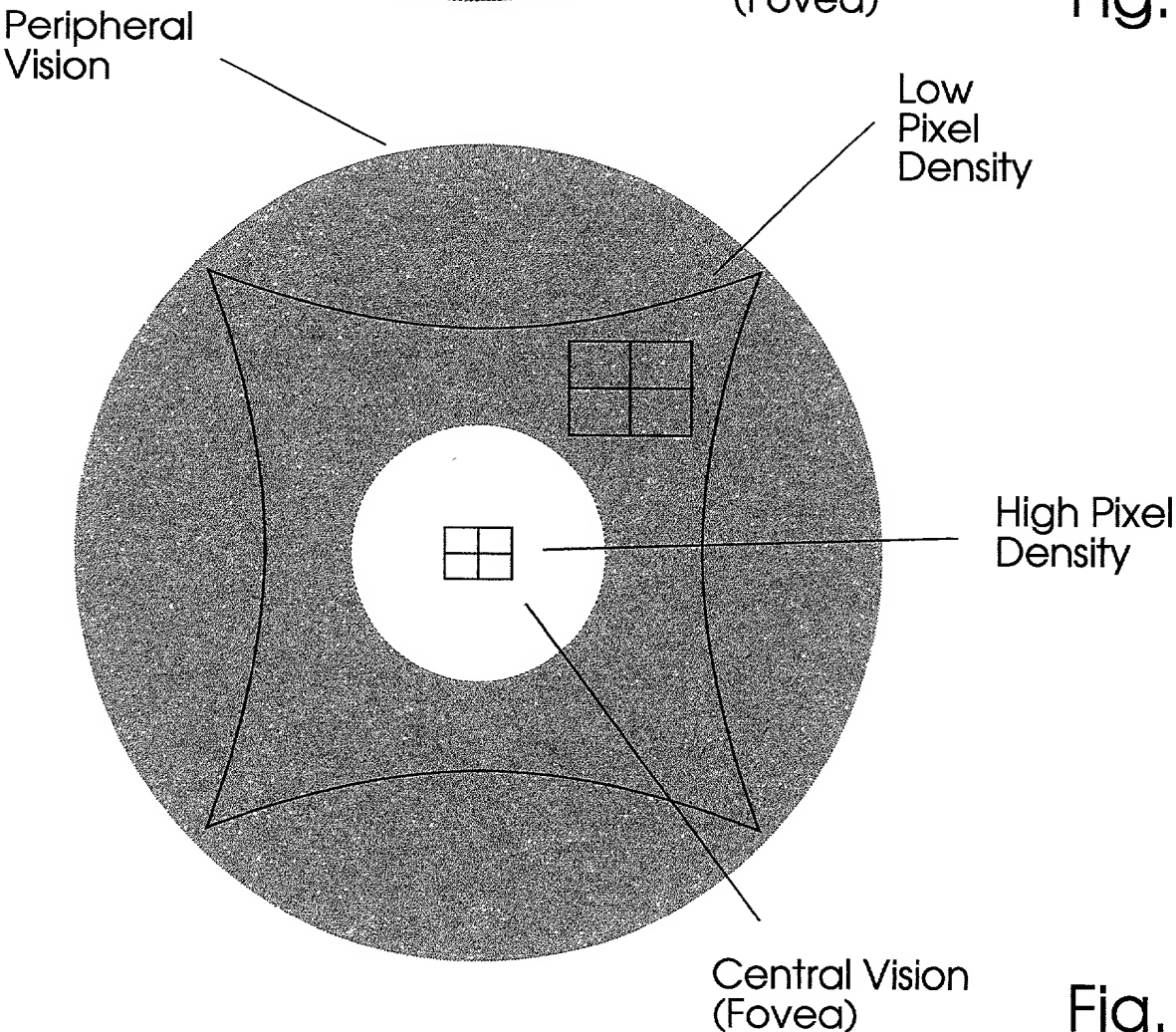


Fig. 36

Colour space comparison

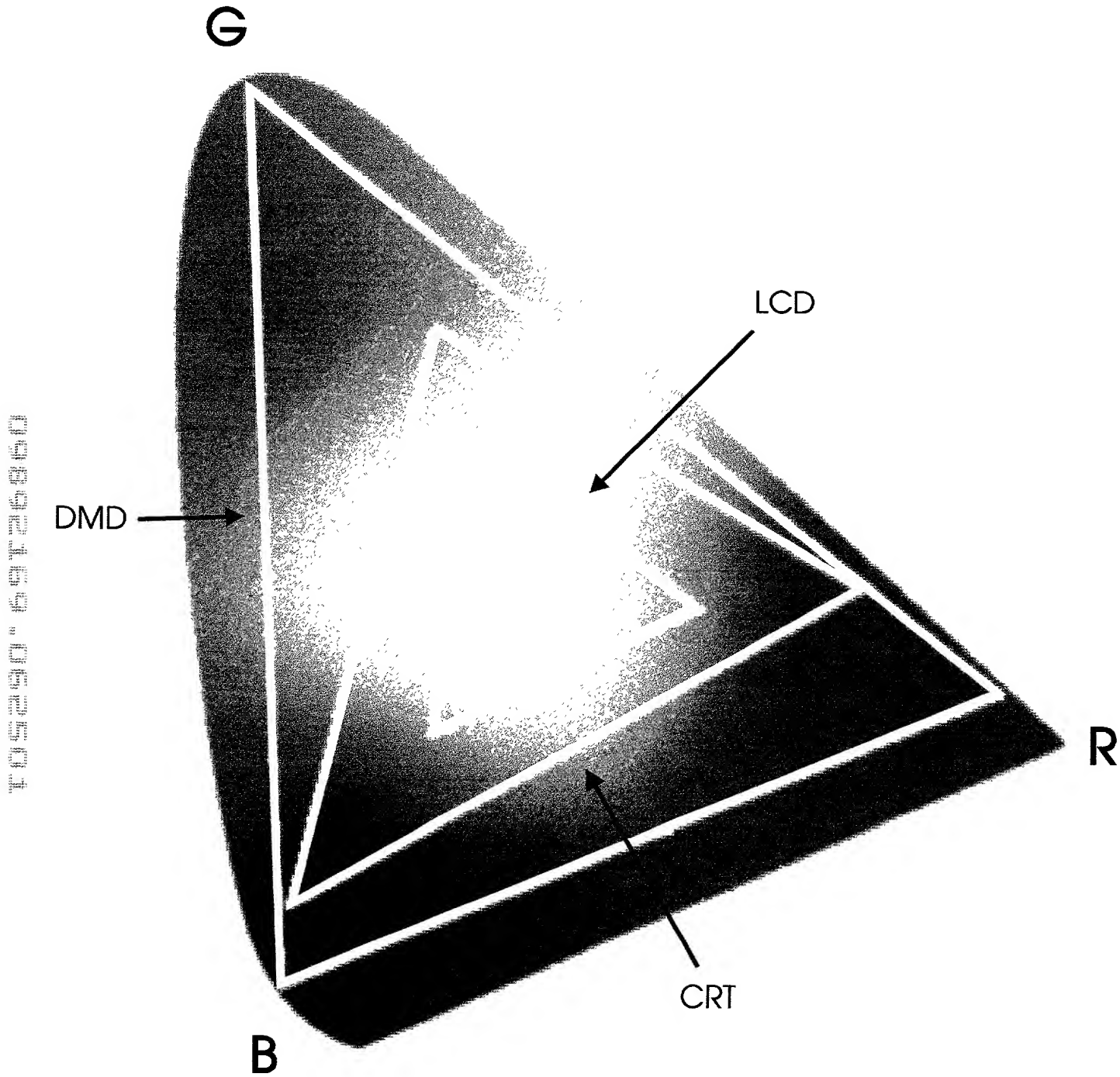


Fig. 37